



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,100	03/23/2006	Syerker Hartwig	AC-108	8926

7590 06/28/2007
Mark P. Stone
25 Third Street
4th Floor
Stamford, CT 06905

EXAMINER

BOMAR, THOMAS S

ART UNIT	PAPER NUMBER
----------	--------------

3672

MAIL DATE	DELIVERY MODE
-----------	---------------

06/28/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,100	Applicant(s) HARTWIG, SVERKER	
	Examiner Shane Bomar	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 9-20 is/are allowed.
- 6) ☒ Claim(s) 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/29/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because of the handwritten reference numerals, lead lines, and words in Figures 4 and 5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because of the use of legal phraseology such as “said” and “means”. Correction is required. See MPEP § 608.01(b).
3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: on page 4, line 15, the recitation of "10 is shown" should most likely be --10 is showing--.

Appropriate correction is required.

Claim Objections

5. Claims 1-20 are objected to because of the following informalities:
- a. with initial respect to claims 1-20, the use of reference characters is objected because their use leads to confusion in understanding the claims, especially in the vertical stabilizing means limitations since the figures and specification clearly describe six such means while there are only five reference numerals listed in the claims, and because claim 20 appears to refer to the wrong numeral for the holder;
 - b. in claim 1, line 1-2, the recitation of "underground excavating boring" should either be --underground excavating-- or --underground boring-- since the current wording is confusing;
 - c. in claim 1, lines 4-5, the recitation of "having cutter head rotation and forcing means" is suggested to be rewritten as --having a cutter head and a rotation and forcing means-- to better convey that which is being claimed;

Art Unit: 3672

- d. in claim 1, line 9, the “hyphen” between “in” and “that” should be removed;
- e. in claims 7 and 8, the recitation of “each holder” lacks proper antecedent basis in claim 5, although it will be assumed claim 7 was meant to depend from claim 6 and claim 8 was meant to depend from claim 6 or 7 for the proper basis;
- f. in claim 13, the recitation of “each pivot means” lacks proper antecedent basis in claims 12 and 1, although it is noted the pivot means is first seen in claim 3;
- g.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 102(b) as being anticipated by US 2,979,320 to Adams.

Regarding claims 1 and 4, Adams discloses a boring rig (5) for underground boring and including a substructure, propulsion means (22), stabilizing means, and a boring unit (26) having a cutter head (64) and a rotation and forcing means (45; col. 3, lines 29-60), wherein the rig has a first direction of general travel along skids (18) and two sideways directions (col. 2, lines 40-49), and wherein the boring unit (26) is pivotally attached to the substructure at (33) for pivotal movement of the boring unit into an operating direction, characterized in that the stabilizing

Art Unit: 3672

means include horizontal (21) and vertical (43) stabilizing means that are attached to the substructure in order, in active positions, to be pressed against an adjacent rock face so as to transmit forces from the boring unit (26), that are occurring during boring, to said rock face (Fig. 1; col. 2, lines 34-40; col. 3, lines 20-28). It is noted that Figure 1 shows the boring unit (26) and the vertical stabilizing means (43) not fully vertical, but this is merely an exemplary boring position and the actuator, or jacks, (37) allow the unit and stabilizing means to reach more of a near vertical position when the jack is fully expanded (col. 3, lines 4-20).

Regarding claims 2, 3, and 19, the boring unit (26) is pivotal about pivot means (33) that are comprised of rotation joints being attached to the substructure at separate locations along the first direction (Figs. 1 and 6), wherein, as stated in claim 1 above, the unit can be pivoted to at least near vertical by the jacks (37) and in at least one sideways direction by jack (22; col. 2, lines 40-54).

Regarding claim 5, the horizontal stabilizing means are sideways directed horizontal jacks (21) positioned on each side (i.e., left and right side) of the substructure (col. 2, lines 34-40; Fig. 4).

Regarding claims 6, 7 (claim 7 as best understood to depend from claim 6), and 20, a force transmitting means (e.g., bracket 36) is provided between each rotation joint (33) and an adjacent holder (18) for a horizontal jack (21), as seen in Figures 4 and 6, wherein each holder (18) for jacks (21) is attached to a respective side member (12, 13) of the substructure (Fig. 5).

Regarding claim 9, when the boring unit (26) is near vertical, as stated in claim 1, the stabilizing means will also be near vertical and they are in the form of jacks 43 (col. 3, lines 20-28).

Regarding claims 10 and 11, the boring unit (26) is pivotally attached at a bottom portion of the unit to a rear portion of the substructure (Fig. 1).

Regarding claims 12 and 13 (claim 13 as best understood to provide proper basis for “each pivot means”), the boring unit (26) includes a front (30) and a rear (31) frame portion that are separated by linear guide means (46) for guiding bore string rotation and forcing means, and wherein the pivot means (33) are attached to the rear frame portion (Fig. 1; col. 2, lines 65-67 and col. 3, lines 29-55).

Regarding claim 14, each frame portion (30, 31) is a piece of a metal plate as is evidenced in the cross-hatching for metal in Figure 3 (col. 2, lines 63-67 show they are plates).

Regarding claim 15, sideways stabilizing means (44; seen as sideways because they operate and are in the same position as Applicant’s means 42) act against a rock face in a direction opposite to the drilling direction (Fig. 1).

Regarding claims 16 and 17, a control unit is used for controlling setting of the stabilizing means and for controlling boring unit positioning and elevation (col. 4, line 61 through col. 5, line 10).

Regarding claim 18, the boring rig of claim 1 includes a drill string component supply and drill string joining means (col. 3, line 61 through col. 4, line 10).

Allowable Subject Matter

8. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, as well as correcting the objections noted above in section 5.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cadwallader, Dubois, Hames et al, Hartwig, Lauber et al, and Walker teach other boring units of particular interest.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shane Bomar/
Patent Examiner
Art Unit 3672

June 19, 2007